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EXAMINER	
VOLPER, THOMAS E	

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2665	8

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/409,922	Applicant(s) BAIRD ET AL.	
	Examiner Thomas Volper	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicants' request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

2. Applicants' arguments filed 27 February 2004 have been fully considered but they are not persuasive.

3. In response to Applicants' argument regarding claims 1-6, 10, 11, 20, 22, 28-32 and 35 that the prior art fails to teach "*packet-switched call signaling connections, each corresponding to one of a plurality of packet-switched calls*", the Examiner respectfully disagrees. As argued in the "Response to Arguments" section of the previous Office action, the Examiner argued that that Ong did in fact transport signaling relating to "*packet-switched calls*". This is because a packet-switched call, as defined by applicants, is a transmission that "at least over the portion of its transmission length relevant to this invention, travels as a series of datagrams over a packet-switch network" (page 7, lines 17-20 of the Specification). Ong clearly discloses transmissions that travel, at least for a portion of their transmission length, over a packet-switched network. This establishes that the signaling transport information of Ong is information related to "*packet-switched calls*". Next, applicants argue that the references do not provide for a plurality of connections "*each corresponding to one of a plurality of packet-switched calls*". Naturally, the signaling transport system of Ong must support individual calls from user endpoint to user endpoint. It is well known in the art that each call must be provided a signaling connection for signaling information, otherwise the call cannot be complete. Ong discloses an architecture that

uses signaling transport from one signaling gateway to another over an IP network (see Figure 10). Ong discloses that one requirement of signaling transport is the ability to multiplex several higher layer SCN sessions on one underlying signaling transport session (section 4). Thus, the signaling transport connection in Figure 10 is able to multiplex a number of different signaling connections onto one signaling transport session and transport these signaling connections from SG1 to SG2. This meets the limitation of a terminating a plurality of packet-switched call signaling connections, and in that multiplexed plurality of signaling connections there exists individual call signaling connections. Applicants also contend that there is no suggestion to combine Ong with Auerbach. There is ample evidence to combine these two references to provide the method according to claim 1. Ong states, "the interfaces pertaining to signaling transport include SG to MGC, SG to SG. Signaling transport may potentially be applied to the MGC to MGC or MG to MGC interfaces as well,..." (section 2.1). Auerbach states "Session Manager is intended to be used between a Media Gateway (MG) or Signaling Gateway (SG)... and a Media Gateway Controller (MGC)" (section 1). To overlook the common subject matter of Ong and Auerbach is the same as admitting to not having even read the references. Auerbach provides the missing feature of Ong in section 1.1 by stating, "Multiple paths between the same MGC and gateway can share the same sessions." The motivation to include this feature of Auerbach is simply to provide a way to transmit the signaling information from the signaling gateway to the media gateway controller.

4. In response to Applicants' argument regarding claims 12-16, 23-27 and 36, that the references fail to show certain features of applicant's invention, it is noted that the features upon which Applicants rely (i.e., backhauling H.323) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The paragraph above responding to applicants' arguments regarding claims 1-6, 10, 11, 20, 22, 28-32 and 35 provides evidence that the prior art does indeed teach packet-switched call signaling.

5. In response to Applicants' argument regarding claims 17, 33 and 34, that a shortcoming of Kalmanek is that "*the gate controller does not retain state information for these stable, active calls*". However, claims 17, 33 and 34 do not mention anything about *stable, active calls.* Kalmanek is included in the combination of references for providing the exchange of state information between two gate controllers (col. 39, lines 6-16), rather than being provide state information from a gateway. The operation of the gate controllers is analogous to the MGC's of Auerbach in the respect that they are both redundant arrangements. It is obvious to combine the feature of exchanging state information with the redundant MGC system of Ong in view of Auerbach in order to avoid the intermediate step of storing state information at the gateway, and then passing it on to a STANDBY MGC.

6. In response to Applicants' argument regarding claims 18, 19 and 21, that the draft H.323 teaches away from the imposition of a call signaling gateway between two endpoints, the Examiner respectfully disagrees. The draft H.323 standard is included in the rejection of claims 18, 19 and 21 to meet the limitations of audio and video bearer streams, and the particular type of call signaling connections of claim 21. The fact that the H.323 standard does not provide a signaling gateway does not teach away from a system that would include a signaling gateway. As mentioned above, the prior art combination of Ong et al. in view of Auerbach et al. (Session

Manager) provides for packet-switched call signaling and a signaling gateway. H.323 is a packet-based technology, thus it may be combined with the teaching provided by Ong et al. in view of Auerbach et al. (Session Manager).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-6, 10, 11, 20, 22, 28-32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft).

Regarding claims 1, 2, 10, 20, 22 and 28-31, Ong discloses an architecture for the transport of signaling information related to Switched Circuit Network (SCN) signaling protocols over IP. Ong discloses that signaling transport shall be used for transporting SCN signaling between a Signaling Gateway Unit and a Media Gateway Controller Unit (1.3, 2nd paragraph). Figure 1: Sigtran Functional Model demonstrates an exemplary architecture of the claimed invention. In this embodiment, the Media Gateway (MG) represents the media endpoint controlled by the media gateway controller. Ong also discloses that the Signaling Gateway terminates an SS7 link of an SCN and transfers the signaling information to the MGC using

signaling transport (2.2, 2nd paragraph). The RTP stream represents one of the packet-switched bearer streams of the present invention. Ong fails to disclose communicating the signaling information over a number of sessions smaller than the plurality of terminated connections from the SG to the MGC. Ong also fails to disclose a plurality of packet switched bearer streams. Auerbach (Session Manager) defines a session as a "physical" connection between a MGC and a gateway (1.1, 1st paragraph). In the introduction (1.) Auerbach includes Signaling Gateways in the more generic category of gateways. Auerbach defines channels as a physical termination of a signaling line, and a path as being defined by a protocol family and consisting of one or more channels. A path uses a session or session group. In addition, multiple paths between the same MGC and gateway can share the same sessions (1.1, paragraphs 4 and 5). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use one or more sessions to communicate the signaling information between the SG and MGC of Ong. It also would have been obvious to route more than packet switched bearer stream to the media endpoint. One of ordinary skill in the art would have been motivated to do this in order to maintain multiple connections between a given SG and MGC and to increase availability of the gateway. One would route a plurality of packet switched bearer streams to a media endpoint to support multiple applications simultaneously.

Regarding claim 3, Ong discloses that once the MGC receives the transported signaling it performs call processing on this signaling (2.3, 1st paragraph).

Regarding claim 4, Ong discloses that the MGC handles registration and management of resources at the MG (1.2, paragraph 5) and the MG controls an interswitch trunk based on control signaling received from the MGC (2.2, 2nd paragraph).

Regarding claims 5 and 32, see paragraph regarding claims 1, 2, 10, 20, 22 and 28-31. The teaching provide therein meets all the limitations of claims 5 and 32, except multiple media gateways and multiple signaling gateways. Ong discloses multiple media gateways each with its own signaling gateway function (see Fig. 3). This covers the limitations of the MGC controlling multiple media endpoints and communicating with multiple signaling gateways.

Regarding claim 6, Fig. 3 of Ong shows different media streams being routed to two different media gateways.

Regarding claims 11 and 35, Ong shows multiple media gateway units comprising media gateways and signaling gateway functions (Fig. 3). As previously established, the media gateway represents a media endpoint.

9. Claims 7-9 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft) as applied to claims 1-6, 10, 11, 20, 22, 28-32 and 35 above, and further in view of Christie, IV (US 6,445,695).

Regarding claims 7-9, the teaching provided by Ong et al. in view of Auerbach et al. (Session Manager) meets all of the limitations of claims 7-9 except for a media proxy that modifies the format of packet-switched bearer streams before forwarding them to a media gateway. Christie, IV discloses a terminal proxy 150 and a terminal adapter/ gateway 140. The terminal adapter/ gateway 140 represents the media gateway of the present invention. Christie, IV also discloses a network server 170, which in this description represents the MGC. Justification for this interpretation is found in Auerbach (Session Manager) (2.0, 1st paragraph)

whereby the MGC is referred to as a server. In Christie, IV, the terminal adapter/ gateway 140 communicates with the terminal proxy 150 using UNISTIM IP while the terminal proxy communicates with the network server 170 via a subset of the Q.931 protocol (col. 5, lines 24-28). In this manner, the terminal proxy acts as a signaling translator. In effect, the terminal proxy is forwarding modified signaling to the terminal adapter/ gateway, which represents the media gateway of the present invention. Christie, IV also discloses that IP telephony networks and existing telephony networks must be made compatible with each other. This necessitates network interfaces capable of converting between IP standards and protocols and existing standards and protocols (col. 1, line 40 – col. 2, line 5). Call state information, bearer connections, and calling services are handled in the terminal proxy, rather than at the terminal (col. 6, 4-6). This suggests that not only does the proxy convert between signaling protocols, but also may modify bearer connections. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the terminal proxy of Christie, IV on behalf of the media endpoint in the system provided by the teaching of Ong et al. in view of Auerbach et al. (Session Manager). One of ordinary skill in the art would have been motivated to do this to provide call processing services for a less capable terminal, or endpoint, such as an IP phone.

Regarding claim 37, it would be obvious to include both media proxies and media gateways as endpoints in order to support both less capable terminals in need of a proxy to provide call processing, and more complicated terminals capable of managing their own call state.

10. Claims 12-16, 23-27 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft) as applied to claims 1-6, 10, 11, 20, 22, 28-32 and 35 above, and further in view of Auerbach et al. (Signaling Backhaul Protocol, 25 February 1999, IETF Internet Draft).

Regarding claims 12 and 27, the teaching provided by Ong et al. in view of Auerbach et al. (Session Manager) provides all the limitations of claim 1, upon which claim 12 depends. In addition, Ong discloses that the signaling transport shall support the ability to multiplex higher layer SCN sessions on one underlying signaling transport sessions (4., paragraph 5). Ong also discloses transport of native SCN protocol messages over a packet switched network, and that a variety of SCN protocol types may be supported (4., 1st paragraph). Ong fails to expressly disclose that the signaling information for a particular native protocol is parsed into protocol data units at the signaling gateway. Auerbach (Signaling Backhaul Protocol) discloses that among the criteria for signaling protocol delivery between a gateway and MGC is the ability to multiplex protocol data units (PDU's) from multiple protocols. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to parse, or multiplex, the signaling content into PDU's identifiable with a particular connection and native transport protocol in order to provide interoperability of the IP network with a variety of SCN networks.

Regarding claims 13, 15, 23 and 36, the aforementioned teaching of Ong et al. in view of Auerbach et al. (Session Manager) provides all of the limitations of claims 1 and 12, but fails to expressly disclose that the backhaul protocol for transporting the signaling protocol is TCP. TCP is well known in the art and a common protocol for transporting IP traffic in a packet network.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use TCP as the backhaul protocol in the architecture of Ong. One of ordinary skill in the art would have been motivated to do this because TCP is widely used and would allow for easy adaptation of existing packet networks that use TCP to support signaling transport of SCN connections.

Regarding claims 14, 16 and 26 the aforementioned teaching of Ong et al. in view of Auerbach et al. (Session Manager) provides all of the limitations of claims 1 and 12, but fails to expressly disclose that the backhaul protocol for transporting the signaling protocol is UDP. With respect to claim 26, the previous paragraph regarding claims 13, 15, 23 and 36 covers the limitation of TCP as a backhaul protocol. Auerbach (Signaling Backhaul Protocol) makes a recommendation to use Reliable UDP (RUDP) (1.1, 3rd paragraph), which is a species of UDP. At the time the invention was made one of ordinary skill in the art it would have been obvious to use RUDP as the backhaul protocol in the architecture of Ong. One of ordinary skill in the art would have been motivated to do this because it is a fast and reliable protocol.

Regarding claims 24 and 25, the previous two paragraphs regarding claims 13, 15, 23 and 36, and claims 14, 16 and 26 cover the limitations of using TCP and UDP as a backhaul protocol. The teaching provided by Ong et al. in view of Auerbach et al. (Session Manager) fails to expressly disclose using SCTP as a backhaul protocol. However, Ong et al. (Architectural Framework for Signaling Transport) provides the basis for SCTP, even though the term SCTP is not used explicitly. It is thus obvious to use SCTP because the signaling transport method described in Ong et al. is essentially a framework for SCTP.

11. Claims 17, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft) as applied to claims 1-6, 10, 11, 20, 22, 28-32 and 35 above, and further in view of Kalmanek, Jr. et al. (US 6,483,912).

Regarding claims 17, 33 and 34, Auerbach (Session Manager) discloses that in a redundant configuration, a gateway is connected to an ACTIVE MGC and one or more STANDBY MGC's (3.5, 1st paragraph), which represent the primary and failover MGCs of the present invention. The signaling application can change the ACTIVE/ STANDBY state at any time (3.5.1, 2nd paragraph), which is effectively switching MGC's. The teaching of Ong et al. in view of Auerbach (Session Manager) fails to expressly disclose that the STANDBY MGC receives state information from the ACTIVE MGC. Kalmanek discloses gate controllers (110 and 111), which are analogous to the media gateway controllers of the present invention (see Figure 1). Kalmanek also discloses that a gate controller domain may include a primary gate controller and a secondary gate controller. A transient state call may be established on the secondary gate controller when the primary gate controller fails (col. 7, lines 38-53). Kalmanek discloses that gate controllers may pass state information between each other (col. 39, lines 6-16). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to pass state information from the ACTIVE MGC and STANDBY MGC of Auerbach (Session Manager). One of ordinary skill in the art would have been motivated to do this to provide a fast switchover to a STANDBY MGC in case of a failure of the ACTIVE MGC with as little affect as possible to the calls that are being established.

12. Claims 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft) as applied to claims 1-6, 10, 11, 20, 22, 28-32 and 35 above, and further in view of Draft H.323, 30 January 1996, Telecommunication Standardization Sector of ITU (ITU-T).

Regarding claims 18 and 19, the aforementioned teaching of Ong et al. in view of Auerbach et al. (Session Manager) provides for all of the limitations of claims 18 and 19 except for routing an audio stream and a video stream associated with the audio stream to the media endpoint. H.323 describes services for multimedia communication over Local Area Network (LAN), which are packet-based, and H.323 terminals may support real-time voice, data and video, or any combination, including videotelephony (page ii, 1st paragraph). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to route audio and video streams to the media endpoint if the endpoint were an H.323 terminal. One of ordinary skill in the art would have been motivated to do this because H.323 is an established standard in the art and a commercially successful application of the signaling transport of the present invention would need to support H.323 devices.

Regarding claim 21, Ong discloses Q.931 signaling in Figure 4: Q.931 Transport Model. Ong fails to disclose H.225 RAS connections and H.245 connections. Draft H.323 describes the operation of the H.245 control function and RAS signaling function in sections 6.2.8 and 6.2.9, respectively. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include H.245 and H.225 RAS connections in addition to the Q.931

signaling in Ong. One of ordinary skill in the art would have been motivated to do this in order to support an H.323 endpoint.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper

March 12, 2004

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